UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/006,881	12/10/2001	Manfred Reiter	V-260.00	2884

7590 08/13/2003

Bexter Healthcare Corporation
P. O. Box 15210
Irvine, CA 92614

EXAMINER
CHEN BROWN, STACY

ART UNIT	PAPER NUMBER
1648	9

DATE MAILED: 08/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/006,881	REITER ET AL.	
	Examiner	Art Unit	
	Stacy B Chen	1648	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 June 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disp sition of Claims

4)☒ Claim(s) *1-21 and 24-38* is/are pending in the application.

4a) Of the above claim(s) *24-38* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *5* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

1. Applicant's election of Group I, claims 1-21 is acknowledged. Claims 1-21 and 24-38 are pending. Claims 24-38 are withdrawn from consideration, being drawn to a non-elected invention. Applicants mainly traverse that the search and examination of Groups I and II would not be burdensome. However, in response, the Office considers the invention of Group I and the invention of Group II to be classified separately. A search for Group I is not co-extensive for Group II. Therefore, the search of Groups I and II would be burdensome. The restriction requirement is deemed proper and made FINAL.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Claims 1, 11 and 14 recite "increased" cell density and "high" cell density. The claims lack comparative basis. To what standard are "increased" and "high" measured against?
- Claims 1 and 14 lack complete method steps resulting in the production of a virus or viral antigen. The method steps lead up to incubation of the culture and cell propagation, but fail to complete the method of production which includes harvesting.

- Claims 4, 6 and 9 recite improper Markush groups. Correct Markush language is "selected from the group consisting of ... and...".

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 7, 8 and 10-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Giroux *et al* (5,994,134). The claims are drawn to a method of producing virus or viral antigen comprising culturing cells bound to a microcarrier, grown to confluence, infected with virus, incubated, and finally harvested and purified. The cell density of the biomass of the cell culture is increased before or after infection, and maintained during incubation. The cell culture grown to confluence is between about $0.6x10^6$ and about $7.0x10^6$ cells/mL. The microcarrier can be made of dextran and used in a concentration between about 0.5 g/L and about 14 g/L. The cells bound to the microcarriers are grown in serum free medium and protein free medium.

Giroux teaches a method of producing recombinant adenoviral vectors at high titers in a cell culture system using 293 cells (col. 9, lines 15-25). The cells are grown to confluence at approximately $8\text{-}10x10^6$ cells/mL. The cells are suspended in 5 L of medium (containing serum) and 50 grams of microcarriers (dextran, see col. 7, lines 1-2), resulting in a concentration of 10 g/L (example 3). Serum free medium is added to the cells during infections (col. 9, lines 26-29). Giroux teaches that increased virus concentration at the infection phase enhances the production

of virus in the producer cell (col. 12, lines 1-3). Method steps of harvesting, lysing, isolating and purifying the viral particles are described (col. 12, lines 32-39). Therefore, claims 1-5, 7, 8 and 10-13 are anticipated by Giroux.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 6, 9 and 14-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Giroux *et al* (5,994,134) as applied to claims 1-5, 7, 8 and 10-13 above, and further in view of Webster *et al* (6,344,354) and Gröner *et al* (6,455,298). The claims are drawn to methods of producing virus, in particular, influenza virus in VERO and MDCK cells. Giroux fails to teach the production of influenza virus in VERO and MDCK cells.

However, Webster teaches the production of influenza virus in VERO cells and MDCK cells (col. 7, section "cell lines", and col. 3, line 7). It would have been obvious to produce influenza virus in Giroux's method. One would have been motivated to produce Webster's influenza virus in Giroux's method because Webster says that there is a long-felt need in the art for a method of influenza virus and vaccine production (col. 4, lines 18-20). Further, the annual influenza vaccine is evidence of the need for methods of producing large quantities of influenza virus and antigen. One would have had a reasonable expectation of success that influenza would have been produced in Giroux's method because Gröner teaches the production of influenza

virus using cells growing adherently on microcarriers (col. 2, lines 30-33). Gröner also uses MDCK cells in the virus production method. Given the long-felt need in the art and the well known cell lines for production of influenza virus, as evidenced by Webster and Gröner, the invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time of the invention.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Conclusion

5. No claim is allowed.

Papers relating to this application may be submitted to Group 1600 by facsimile transmission. Papers should be faxed to Group 1600 located in Crystal Mall 1. The Fax number for Art Unit 1648 is (703) 308-4426. All Group 1600 Fax machines will be available to receive transmissions 24 hrs/day, 7 days/wk. Please note that the faxing of such papers must conform with the Notice published in the Official Gazette, 1096 OG 30, (November 15, 1989).

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Stacy B. Chen, whose telephone number is (703) 308-2361. The

Examiner can normally be reached on Monday through Friday from 7:30 AM-4:00 PM, (EST). If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's Supervisor, James C. Housel, can be reached at (703) 308-4027. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196.

SBC
Stacy B. Chen
August 6, 2003

James C. Housel 8/8/03
JAMES HOUSEL
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600